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ABSTRACT

In order to gain a better understanding of metaphor comprehension in different cultural contexts, this study compared the performances of two groups of children from different cultural and linguistic backgrounds but with common schooling experiences on two tests of metaphor: the Metaphor Triads Task (MTT) and the Proverbs Test. The Ravens Colored Progressive Matrices Test (CPMT) was also administered to examine how performance on a standardized nonverbal intelligence test compared with performance on the metaphor tests. Subjects were 30 Canadian-born Greek-speaking children of Greek-born parents, aged 8 and 11 years, and 30 same-aged Canadian-born children of Canadian-born parents. All tests were administered in English. Results for both cultural groups showed significant differences between 8- and 11-year-olds' performances on the two metaphor tests. Raw scores on the Ravens CPMT correlated significantly with correctness and correct abstract scores but not with correct literal scores of the Proverbs Test. Ravens scores also correlated significantly with MTT scores (specifically, with metaphorical explanations). The only significant differences between the two groups was that Greek-Canadian children preferred correct general meanings of the moral in the Proverbs Test to a greater extent than did other Canadian children. (RH)

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A Cross-Cultural Study of Children's Metaphoric Capacity

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A Cross-Cultural Study of Children's Metaphoric Capacity

Introduction

In order to gain a better understanding of metaphor comprehension in different cultural contexts, two groups of children who were from two different cultural and linguistic backgrounds, but who had common schooling experiences were compared on their performance on two tests of metaphor. The Ravens Coloured Progressive Matrices Test was also administered to examine how performance on a standardized nonverbal intelligence test compares with the performance on these two tests.

The two metaphor tests are the Metaphor Triads Task (MTT) developed by Kogan (1980) and the Proverbs Test developed by Gamlin and Djap (1983).

Method

The Metaphoric Triads Task (Kogan, 1980) consists of 29 visual triads, each offering three possible pairings of pictorial stimuli, one of which is metaphorical in character. A subject's score reflects the number of metaphoric pairings formed (with appropriate metaphoric explanations) across all of the triads of the task. An example of a triad is shown in Figure 1 in the Appendix.

For each triad, children were first asked to indicate their most preferred pairing (which two pictures "go together best") and the basis on which the pairing was made. The children were then asked whether they could make any other pairings and, if so, were again requested to specify the basis for it (them).

Two scores were computed for the MTT. The first score was the sum of correctly paired pictures, that is, pairings that reflected a conceptual leap in making similarity judgments. The second score was the sum of correctly paired pictures that had a satisfactory explanation of the metaphorical link. Both scores were based on the most preferred pairing.

The Proverbs Test is a verbal assessment of the child's ability to understand nonliteral meaning (the moral of the proverb). The test contains 30 proverb items. For each of the thirty items there are four paraphrases (that is, the four response-alternatives).

A sample of a proverb item and its associated paraphrase is shown in Figure 2 in the Appendix.

The first paraphrase is a correct abstract response which has the same meaning as the proverb (this is the moral of the proverb).

The second paraphrase is an incorrect concrete response which has a different meaning than the proverb.

The third paraphrase is a correct concrete response which has the same literal meaning as the proverb.

The fourth paraphrase is an incorrect abstract response which has a different meaning than the proverb.

When being tested, individuals were asked to read each of the thirty proverb items and for each item, to select two answers (of the four alternatives provided) that meant about the same as the proverb. For each item, they were also asked to indicate which of the two selected

answers was the best answer for that particular proverb.

Five dependent measures were computed for this test. The first measure was a correctness score, that was derived by adding together those responses which were correct, collapsed across literal (specific) and general paraphrases to yield a possible total of thirty.

The correct general (or abstract) accuracy measure was derived by considering only the youngsters' selection of the moral no matter whether that choice was selected as the 'better' meaning or the second best meaning of the proverb.

The correct general (or abstract) preference measure was derived by considering only the youngsters' selection of the moral as the 'better' meaning of the proverb.

The fourth and fifth measures were the number of correct literal paraphrases and the number of correct literal paraphrases preferred to be the best meaning.

The Ravens Coloured Progressive Matrices Test, the Metaphoric Triads Task and the Proverbs Test were administered to 30 children aged 8 and 11 years who were born in Canada, but whose first language was Greek and whose parents were born and raised in Greece (Canadian-Greek children) and to 30 Canadian children aged 8 and 11 who were born in Canada and whose parents were born in Canada. All tests were administered in English.

Results

Tables 1 and 2 show a summary of the results (Appendix).

Developmental Trends

Results showed significant differences between the 8 and 11 year olds' performances on the two metaphor tests for both cultural groups. For the MTT test, the eleven year olds picked significantly more correct metaphorically based pairs and gave more metaphorically based explanations than the eight year olds. For the Proverbs Test, the eleven year olds chose more correct abstract paraphrases than the eight year olds and showed more preference for these paraphrases as their first choice than the eight year olds. There were no significant age differences with respect to the Ravens' percentile scores.

Sex Differences

Analyses of variance showed no significant sex differences for performance on the RCPMT, the MTT and the Proverbs Test.

Criterion Measures

The raw scores on the Ravens CPMT correlated significantly with the correctness and correct abstract scores but not with the correct literal scores of the Proverbs Test. The Ravens' scores also correlated significantly with the MTT scores (with metaphorical explanations).

Cultural Comparisons

There were no significant differences between the scores for the Canadian and Canadian-Greek children on the RCPMT and on the MTT.

There were no significant differences between the Canadian and Canadian-Greek children for the Proverb Test's correctness, correct abstract and correct literal scores.

The only significant difference between the two groups was that the Canadian-Greek children preferred the correct general meanings of the paraphrases (that is, the moral) in the Proverbs Test to a greater extent than did the Canadian children.

Discussion

These results can be interpreted to mean that the Canadian-Greek children's exposure to proverbs in their culture enhanced their abstract recognition skills when working with proverbs. Each culture demands, fosters and rewards a somewhat different set of cognitive skills (Anastasi, 1983). Proverbs are used widely in Greece. Metaphorical expression is very popular and is used extensively in the Greek language, folklore and music. Given that the Greeks in Toronto have retained their ethnic identity in the form of traditions and values of the homeland and that one of these values is language (or the mother tongue), it could be that the Canadian-Greek children were developmentally 'ready' to benefit from their exposure to proverbs. That is, they were able to practise their verbal metaphorical thinking skills.

It is possible given the same type of exposure to proverbs, the Canadian children would have performed comparably. That this difference between the two groups was a function of cultural background rather than a function of differential cognitive skills is supported in the data for

the Metaphoric Triads Task, since the two groups showed similar performance. Furthermore, the developers of the MTT (Kogan et. al., 1980) found significant correlations between the MTT and a set of verbal metaphorical triads and suggested that this was evidence for "general metaphorical style" across verbal and visual domains.

Another factor which may have contributed to the difference in the performance between the two groups, other than exposure to proverbs, may be linguistic. It has been stated by Cummins (1980) that bilingual children may be more adept at certain aspects of linguistic processing. In gaining control over two language systems, the bilingual child has had to decipher much more language input than the unilingual child. (The Canadian-Greek children in the present study speak Greek at home and attend Greek classes three evenings a week for a total of nine hours; this is common for children of Greek decent in Ontario.) In a study carried out by Cummins and Mulcahy (1978) it was shown that students who were relatively fluent in Ukranian as a result of parents using it consistently in the home were significantly better able to detect ambiguity in English sentences than equivalent unilingual English-speaking children.

The effects of bilingualism on the understanding of nonliteral prose needs to be studied further.

That there were no other significant differences between the two cultural groups (that is, on the RCPMT and MTT) in this study can be explained as follows: Both these groups were exposed to common schooling which foster the same basic thinking skills. Anastasi (1983) has stated that there is evidence that formal schooling may play an important part

in encouraging abstract thinking and concept formation in Western-type schools. The blurring of cultural differences then will occur in studies of minority samples attending the same school system in the U.S. and Canada.

This study has implications for evaluating children's 'potential to learn'. First, tests need to be developed from task analyses conducted within each culture, and these tests should sample those cognitive skills and knowledge that are valued and fostered within each culture (Bountrogianni, 1983).

Secondly, verbal tests with reduced cultural biases need to be developed. In the past, the solution to the item bias of intelligence tests was thought to be the construction of non-verbal items. However, avoiding verbal stimuli in the assessment of learning potential leaves a gap in the teacher's or psychologist's knowledge on the language abilities or disabilities of children from different cultures. Culturally appropriate verbal tests (as was the Proverbs Test in the present study) can be developed and used in conjunction with other verbal and nonverbal instruments when assessing the potential to learn.

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APPENDIX

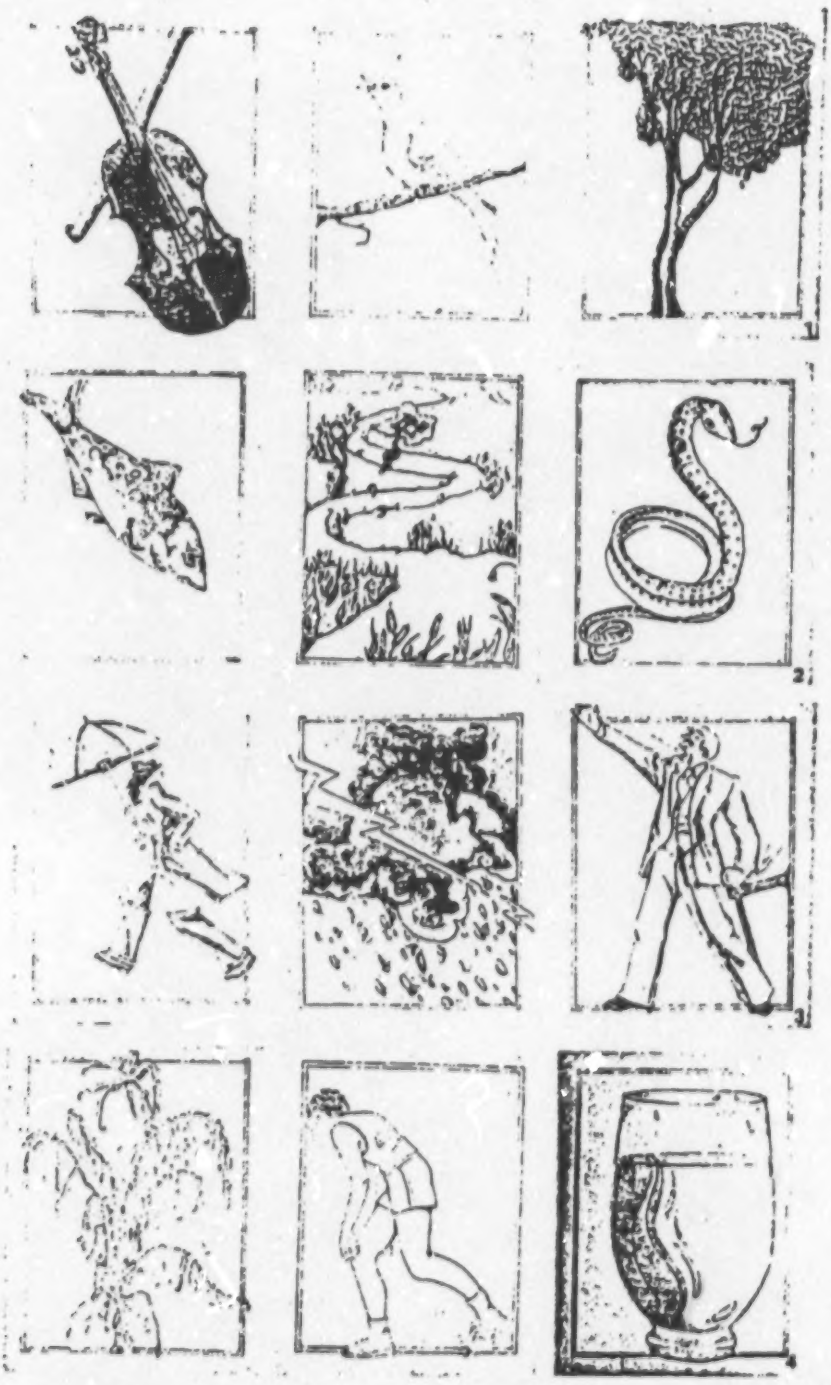

Figure 1

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Proverb Item

It is no good crying over spilt milk

After you have made a mistake, do something better than worrying about it, (correct abstract)

After you have spilt milk, crying about it is a good thing to do, (incorrect concrete)

After you have spilt milk, do something better than crying about it, (correct concrete)

After you have made a mistake, worrying about it may help , (incorrect abstract)

Figure 2

Table 1

Analysis of Variance
of Ravens CPMT Percentile Scores
for Three Age Groups (&N=90)

Source	df	MS	F-ratio	p-value
Between groups	2	1754.41	2.97	.06
Within groups	87	590.31		

Analysis of Variance
of MTT Scores for Two Age Groups (&N=60)

Source	df	MS	F-ratio	p-value
Between groups	1	156.82	8.30	.01
Within groups	58	18.91		

Analysis of Variance
of Ravens CPMT Percentile Scores
for Males and Females (&N=90)

Source	df	MS	F-ratio	p-value
Between groups	1	1683.85	2.79	.10
Within groups	88	604.34		

Analysis of Variance
of MTT Scores for Males and Females (&N=90)

Source	df	MS	F-ratio	p-value
Between groups	1	0.30	0.01	.91
Within groups	58	21.61		

Table 2

Mann-Whitney on Percent Scores of Ravens Coloured Progressive Matrices Test as a Function of Cultural Background (N=90)

	Median Scores on Ravens	Mann-Whitney U	p value
Canadian	58.0	2220.0	0.1651
Canadian-Greek	50.0		

Table

Mann Whitney U Test on Scores on the Metaphoric Triads Task as a Function of Cultural Background (N=60)

	Median	Mann Whitney U	p value
Pairs of Correct Recognition		916.0	0.9941
Canadian	6.5		
Canadian-Greek	6.5		
Pairs of Metaphorical Explanation			
Canadian	6.0	1003.5	0.1932
Canadian-Greek	4.5		

Mann-Whitney U Test on Scores on the Proverbs Test as a Function of Cultural Background (N=60)

	Median	Mann Whitney U	p value
Correctness			
Canadian	39.0	994.5	0.2428
Canadian-Greek	36.5		
Correct Abstract			
Canadian	16.0	877.5	0.5844
Canadian-Greek	18.5		
Correct Abstract Preference			
Canadian	5.0	763.5	0.0256
Canadian-Greek	9.5		
Correct Literal			
Canadian	27.0	1036.5	0.0735
Canadian-Greek	21.0		
Correct Literal Preference			
Canadian	17.5	1129.0	0.0016
Canadian-Greek	9.0		